



**[4910-13-P]**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2015-1008; Directorate Identifier 2013-SW-064-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Sikorsky Aircraft Corporation (Type Certificate  
Previously Held by Schweizer Aircraft Corporation)**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for Sikorsky Aircraft Corporation (Sikorsky) Model 269A, 269A-1, 269B, 269C, 269C-1, 269D, and TH-55A helicopters. This proposed AD would require repetitively inspecting and lubricating the tail rotor (T/R) driveshaft splined fittings. This proposed AD is prompted by a report that the T/R driveshaft can disconnect due to deterioration of the splined coupling. The proposed actions are intended to detect and prevent excessive wear of the splined coupling, which could lead to failure of the T/R driveshaft and subsequent loss of control of the helicopter.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments by any of the following methods:

- Federal eRulemaking Docket: Go to <http://www.regulations.gov>. Follow the online instructions for sending your comments electronically.

- Fax: 202-493-2251.

- Mail: Send comments to the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590-0001.

- Hand Delivery: Deliver to the “Mail” address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the Docket Operations Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the economic evaluation, any comments received, and other information. The street address for the Docket Operations Office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

For service information identified in this proposed AD, contact Sikorsky Aircraft Corporation, Customer Service Engineering, 124 Quarry Road, Trumbull, CT 06611; telephone 1-800-Winged-S or 203-416-4299; email [sikorskywcs@sikorsky.com](mailto:sikorskywcs@sikorsky.com). You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-1008.

**FOR FURTHER INFORMATION CONTACT:** Stephen Kowalski, Aviation Safety Engineer, New York Aircraft Certification Office, Engine & Propeller Directorate, 1600 Stewart Ave., suite 410, Westbury, New York 11590; telephone (516) 228-7327; email [stephen.kowalski@faa.gov](mailto:stephen.kowalski@faa.gov).

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

We invite you to participate in this rulemaking by submitting written comments, data, or views. We also invite comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit only one time.

We will file in the docket all comments that we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, we will consider all comments we receive on or before the closing date for comments. We will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. We may change this proposal in light of the comments we receive.

## **Discussion**

We propose to adopt a new AD for Sikorsky Model 269A, 269A-1, 269B, 269C, 269C-1, 269D, and TH-55A helicopters. This proposed AD would require a one-time inspection and lubrication of the T/R driveshaft splined fittings and replacing a splined

fitting and the T/R driveshaft if the fitting has excessive wear. This proposed AD would also require repetitively inspecting the driveshaft for straightness, twists, and scratches, repetitively inspecting the internal coupling splines, internal stops, and coupling drive splines for wear, and repetitively correcting the torque of each main transmission aft pinion nut (pinion nut).

This proposed AD is prompted by a report of excessive spline wear on the forward and aft T/R driveshaft splined fittings installed on Sikorsky Model 269A, 269A-1, 269B, 269C, 269C-1, 269D, and TH-55A helicopters. This abnormal spline wear can lead to the T/R driveshaft disconnecting. An investigation has determined that insufficient lubrication of the splined fittings can result in deterioration of the splined teeth and subsequent failure of the T/R driveshaft coupling. The proposed actions are intended to detect excessive wear of the splined coupling and prevent failure of the T/R driveshaft and subsequent loss of control of the helicopter.

Sikorsky has developed a one-time inspection that requires cleaning, inspecting, and lubricating the driveshaft splines. Sikorsky has also developed a repetitive 100-hour time-in-service (TIS) requirement for inspecting the T/R driveshaft for straightness, twists, and scratches; each coupling and internal stop for wear; each coupling drive spline for wear; and each pinion nut for correct torque.

#### **FAA's Determination**

We are proposing this AD because we evaluated all known relevant information and determined that an unsafe condition exists and is likely to exist or develop on other helicopters of these same type designs.

## **Related Service Information under 1 CFR part 51**

We reviewed Sikorsky 269 Alert Service Bulletin (ASB) B-299.1 for Model 269A, 269A-1, 269B, 269C, and TH-55A helicopters; 269C-1 ASB C1B-036.1 for Model 269C-1 helicopters; and 269D ASB DB-041.1 for Model 269D helicopters, each Revision 1 and dated February 24, 2012. Each ASB describes procedures for cleaning, inspecting, and lubricating the forward and aft T/R driveshaft splined fittings and returning to Sikorsky any parts that exceed wear limits. Each ASB also requires implementing a 100 hour TIS recurring inspection of the T/R driveshaft, coupling and internal stop, coupling drive splines, and the pinion nut by following the procedures in each model helicopter's Handbook of Maintenance Instructions. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section of this NPRM.

## **Proposed AD Requirements**

This proposed AD would require, within 100 hours TIS, inspecting for wear and lubricating the forward and aft T/R driveshaft splines by following certain procedures in the Sikorsky ASBs for each model helicopter. If there is excessive wear of the T/R driveshaft splines, the proposed AD would require replacing the driveshaft fitting before further flight. If the helicopter has a T/R driveshaft grease fitting installed, the proposed AD would also require inspecting each grease fitting for certain conditions and replacing the grease fitting if necessary. The proposed AD would also require, at intervals not exceeding 100 hours TIS, inspecting the T/R driveshaft for straightness, twists, and

scratches; inspecting each forward and aft T/R driveshaft splines for wear; and correcting the torque of each pinion nut.

### **Differences between this Proposed AD and the Service Information**

The Sikorsky ASBs require returning any splined fittings that exceed wear limits to Sikorsky, while this proposed AD requires replacing those fittings and the T/R driveshaft.

### **Costs of Compliance**

We estimate that this proposed AD would affect 1,085 helicopters of U.S. Registry. We estimate that operators may incur the following costs in order to comply with this AD. At an average labor rate of \$85 per work-hour, inspecting and lubricating the T/R driveshaft splined fittings would require 1.8 hours, for a cost per helicopter of \$153 and a total cost of \$166,005 for the fleet. Inspecting the grease fittings would require 0.25 hour, for a cost of \$21 per helicopter and a total cost of \$22,785 for the fleet. Inspecting the driveshaft, fittings, internal stops, and drive spines would require 1.8 hours, for a cost per helicopter of \$153 and a total cost of \$166,005 for the fleet, per inspection cycle.

If required, replacing the T/R driving spline and driveshaft would require 1.6 work-hours, and required parts would cost about \$14,853, for a cost per helicopter of \$14,989.

If required, replacing a T/R driven spline and driveshaft would require 1.5 work-hours, and required parts would cost about \$14,836, for a cost per helicopter of \$14,964.

If required, replacing a grease fitting would require about .25 work-hour, and required parts would cost about \$5, for a cost per helicopter of \$26.

## **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. “Subtitle VII: Aviation Programs,” describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in “Subtitle VII, Part A, Subpart III, Section 44701: General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed, I certify this proposed regulation:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);



3. Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction; and

4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared an economic evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by Reference, Safety.

#### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**Sikorsky Aircraft Corporation (Type Certificate Previously Held by Schweizer Aircraft Corporation) Helicopters:** Docket No. FAA-2015-1008; Directorate Identifier 2013-SW-064-AD.

#### **(a) Applicability**

This AD applies to Sikorsky Aircraft Corporation (Sikorsky) Model 269A, 269A-1, 269B, 269C, 269C-1, 269D, and TH-55A helicopters, certificated in any category.

**(b) Unsafe Condition**

This AD defines the unsafe condition as insufficient lubrication of a tail rotor (T/R) driveshaft splined fitting. This condition could result in excessive wear of the T/R driveshaft splines, which could lead to failure of the T/R driveshaft and subsequent loss of control of the helicopter.

**(c) Comments Due Date**

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

**(d) Compliance**

You are responsible for performing each action required by this AD within the specified compliance time unless it has already been accomplished prior to that time.

**(e) Required Actions**

(1) Within 100 hours time-in-service (TIS):

(i) Inspect each T/R driveshaft splined fitting for a crack, a break, excessive wear, galling, spalling, chipping, corrosion, heat discoloration, and distortion by following the Accomplishment Instructions, paragraphs 3.B.(1) through 3.B.(2), of Sikorsky 269 Alert Service Bulletin (ASB) B-299.1 for Model 269A, 269A-1, 269B, 269C, and TH-55A helicopters; 269C-1 ASB C1B-036.1 for Model 269C-1 helicopters; or 269D ASB DB-041.1 for Model 269D helicopters, each Revision 1 and dated February 24, 2012. If there is a crack, a break, excessive wear, galling, spalling, chipping, corrosion, heat discoloration, or distortion on any T/R driveshaft splined fitting, before further flight, replace the affected splined fitting and the T/R driveshaft.

(ii) If installed, inspect each T/R driveshaft grease fitting for looseness, presence of a check ball inside each fitting, and for proper operation and seating of each check ball. If any grease fitting is loose, missing a check ball, fails to properly operate, or if a check ball fails to seat, before further flight, replace the grease fitting.

(iii) Lubricate each driveshaft fitting by following the Accomplishment Instructions, paragraph 3.B.(6), of Sikorsky 269 ASB B-299.1 for Model 269A, 269A-1, 269B, 269C, and TH-55A helicopters; 269C-1 ASB C1B-036.1 for Model 269C-1 helicopters; or 269D ASB DB-041.1 for Model 269D helicopters, each Revision 1 and dated February 24, 2012.

(2) Within 100 hours TIS after the inspections required by paragraph (e)(1) of this AD, and thereafter at intervals not exceeding 100 hours TIS:

(i) Remove the driveshaft from the gearbox and clean any grease from each end fitting.

(ii) Inspect the driveshaft for straightness, a twist, and a scratch. If the driveshaft has any bends, twists, or scratches, before further flight, replace the driveshaft.

(iii) Inspect the internal splines of each forward and aft fitting and each internal stop for wear. If there is any wear, before further flight, replace the fitting.

(iv) Inspect the drive splines of each splined drive fitting for wear. If there is any wear, before further flight, replace the splined drive fitting.

(v) Loosen the aft frame clamp and apply a torque of 750 to 1,000 inch-pounds to each main transmission aft pinion nut.

**(f) Alternative Methods of Compliance (AMOC)**

(1) The Manager, New York Aircraft Certification Office, FAA, may approve AMOCs for this AD. Send your proposal to: Stephen Kowalski, Aviation Safety Engineer, New York Aircraft Certification Office, Engine & Propeller Directorate, 1600 Stewart Ave., suite 410, Westbury, New York 11590; telephone (516) 228-7327; email [stephen.kowalski@faa.gov](mailto:stephen.kowalski@faa.gov).

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, we suggest that you notify your principal inspector, or lacking a principal inspector, the manager of the local flight standards district office or certificate holding district office before operating any aircraft complying with this AD through an AMOC.

**(g) Additional Information**

For service information identified in this AD, contact Sikorsky Aircraft Corporation, Customer Service Engineering, 124 Quarry Road, Trumbull, CT 06611; telephone 1-800-Winged-S or 203-416-4299; email [sikorskywcs@sikorsky.com](mailto:sikorskywcs@sikorsky.com). You may review a copy of information at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

**(h) Subject**

Joint Aircraft Service Component (JASC) Code: 6500: Tail Rotor Drive.

Issued in Fort Worth, Texas, on April 14, 2015.

Lance T. Gant,

Acting Directorate Manager, Rotorcraft Directorate,  
Aircraft Certification Service.

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